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Government before the expiry of the current lease for the disposal of fisheries otherwise than by public auction. The Fisheries Department should inform the Revenue or Public Works officers, as the case may be, of the orders of Government immediately they are issued.

(4) If no intimation is received by the Revenue or Public Works officers from the Fisheries Department for the postponement of fishery sales before the time prescribed in clause (3) above, the fishery should be disposed of in the usual course and the results intimated to the Fisheries Department before confirmation. No proposal at that stage from the Fisheries Department to set aside the auction will be entertained by Government unless it is shown that there was fraud or collusion or combination which has led to a loss of the legitimate income as compared with the average rentals of the past few years.

APPENDIX XVIII.

[Vide answer to question No. 316 asked by Mr. Basheer Ahmed Sayeed at the meeting of the Legislative Council held on the 30th October 1931, page 85 supra.]

(1)

Letter from the Director of Industries, No. 280-D/31, dated 30th July 1931.

The officers of the department are assisting the Research Engineer in every possible way with information, staff and materials.

2. The process of sizing as carried out in the mills by the use of power driven machines was explained to him, and all the literature available on the subject was placed at his disposal by the Assistant Director of Industries (Textiles). The working of the existing departmental hand driven forced hot air sizing machine and its shortcomings from a commercial standpoint were also explained to him in detail. The conditions which the newly evolved appliance should fulfil in order to meet the requirements of the street sizers were indicated to the Research Engineer who was also shown the financial aspect of the working of the departmental sizing machine. A number of components and accessories were supplied to the Research Engineer for constructing an experimental sizing machine and as soon as it was ready, a demonstrator for the Textile Institute was placed at his disposal for the purpose of working the newly evolved machine.

3. In regard to the evolution of the lampblack collecting apparatus all necessary facilities for the investigation were arranged by the Superintendent of the Industrial Institute, Madras, who has closely collaborated with the Research Engineer in his experiments in this regard.

4. In the matter of workshop facilities, all possible assistance has been rendered to the Research Engineer by the Industrial Engineer and his Assistant. The resources of the workshop are at the disposal

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of the Research Engineer and whatever work he entrusts, it is carried out as expeditiously as possible under the personal supervision of the Assistant Industrial Engineer in charge. The Research Engineer and his two mechanics often visit the workshops when work is in progress and every facility is given to them to offer their suggestions with a view to its satisfactory execution. In cases where the work required by the Research Engineer is beyond the resources of the Industrial Workshops recourse is had to private workshops. The Research Engineer freely acknowledges the assistance rendered him by the Industrial Engineer and the Assistant Industrial Engineer in the course of the experiments.

(2)

I submit in the following brief notes regarding my work and present outlook. I indicate also the lines on which I would be best employed in the immediate future.

I have concentrated myself on two problems, lampblack apparatus and sizing machine.

Lampblack.—As the Director may be aware, lampblack has been made out of dead oil and crude oil in a specially devised furnace and collecting chambers and small quantities were in the first instance collected with a view to ascertain the possibility of collection and the usefulness of the product. Having been fairly satisfied in both respects by ascertaining that the yield was about 20 per cent of the oils burnt and that the product was good enough for manufacture of rotary ink (higher quality printing ink) we have now been constructing a moderate sized apparatus consisting of burners, burning chamber and collecting chambers to ascertain the commercial efficiency. Considerable progress has been made in the construction of the chambers, etc., and in a few days the plant will be in actual operation.

This apparatus is being built on the experience and observations made in the preliminary tests and it remains to be seen whether it may require modifications in the light of experience gained after working the plant for some time. I have in view alternative ideas for deflecting the products of combustion in the collecting chamber, but in the proposed plant only one of my ideas has been embodied. The alternative ideas will also be practically tested after noting the result of the working of the plant as it is now being constructed.

As regards the materials employed for conversion, it is essential to investigate the possibility of utilizing coaltar for generating lampblack. I hope to try this aspect with specially devised burners and burning chamber simultaneously. I have not taken up this question till the lampblack plant under construction approaches completion. I hope to take up this question of obtaining lampblack from coaltar from the beginning of next month as by that time the apparatus under construction is likely to be completed and ready for regular production of lampblack.

I have constructed the chambers in the open ground adjoining the Government Industrial Institute taking due precaution that the

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posure to wind and rain would not hinder the operation. The roof of the chambers is sloping and adjoining ground covered with concrete and plaster to prevent dirt and mud from getting mixed with the product.

Sizing machine.—When I was charged with the devising of simple textile appliance I was definitely told by the Textile Expert and the Director that the Amalsad Patent Sizing Machine should be improved upon in the following respects:—

(1) That the number of ends should be increased by about 50 per cent; and

(2) that the drying effect should be more pronounced and quicker than the Amalsad Sizing Machine. I have accordingly constructed a machine to satisfy both the above conditions.

Having tested the working of this machine it seems necessary that a few minor alterations have to be made before making further tests with the machine. The Textile Expert after carefully examining the working of the machine has submitted a report to the Director and the observations made therein with regard to the efficiency of the machine have certainly to be considered in making the appliance much more efficient and economical.

In the first few months after I have taken up the question I was unable to perceive as clearly as I do now with regard to the general principles underlying sizing operations in a hand-driven machine. In all the power sizing plants there is no brush while the new and Amalsad Sizing Machines and in the street sizing method brushing forms an important operation in the practice of sizing. Both in the Amalsad Sizing Machine and in the new machine now constructed the warps very often break and the piecing together of these forms a tedious and wasteful item. There is no reason why a sizing machine for hand-power cannot be devised without this brushing operation on the model of power sizing machines. This is being considered by me and will be practically tested in the next few months.

In the Amalsad Sizing Machine and the machine now constructed there are only a limited number of ends and there is no reason why a hand-driven sizing machine cannot be devised so as to contain all the warp ends entering into the cloth just in the same manner as the dresser sizing machine. But of course this would involve that the yarn should be previously wound on the beams and the weaver should be able to take sized yarn from the beam as practised in the power looms. There should be no difficulty to make the weavers adapt to this condition provided, of course, that the cost of machine sizing is cheaper than street sizing.

If the breaking of the threads is entirely eliminated by doing away with the friction at the brushes and the minimizing of friction in other places such as the rollers, reeds, etc., the length required for the fitting up of the sizing machine can be considerably diminished by taking the yarn sheet three or four times in successive layers one below the other, after it has passed the furnace.

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Both in the Amalsad Sizing Machine and the new machine now constructed the yarn from the sizing machine converges to the beamer to such a narrow width as will produce unequal strain in the different ends. This also leads to the breaking of the yarn and this factor for the breakage of the threads will be entirely cut off if the beamer winds up the yarn sheet to the same width as that obtaining over the sizing machine.

These main ideas as well as other smaller details have been found by me after carefully studying the merits and demerits of some of the hand and power-driven machines and also the working of the street sizers.

The machine now completed will only mark just a step forward but is by no means as satisfactory as it ought to be. So long as a hand-driven sizing machine would require no piecing and so long as the drying would be as quick and effective as a power sizing machine, then alone can we say that a suitable handsizing machine has been evolved. In the next few months my attention would be devoted to discover the possibility of evolving such a machine and it is not prudent to cut off from this direction at the present moment and devote to some other weaving appliance with greater concentration. A sizing machine thus evolved would answer the purpose of a moderate sized weaving factory or would be a useful means for distributing warps to a number of handloom weavers who cannot economically take to handsizing.

With regard to individual weavers or weaver families a small sizing equipment capable of handling ten to twenty ends should be devised so that small warp lengths can be easily and quickly sized for small scale weavers working with humble resources. Mr. Radhakrishna Chetti of Kuppam told me that he had come across an intelligent young man who has been successfully experimenting with a small outfit for sizing about ten ends and I propose to see what this man has achieved to enable me to devise a small sizing equipment for individual weavers.

C. S. Ramachandran,
Research Engineer.

TRUTH ALONE TRIUMPHS

Appendix XIX.

[Vide answer to question No. 340 asked by Mr. K. P. V. S. Muhammad Meera Ravuttar at the meeting of the Legislative Council held on the 30th October 1931, page 94 supra.]

Name of district.	Number of cars at the end of 1930.	Number of taxis at the end of 1930.	Number of buses at the end of 1930.
Madras City	5,500	157	510
Anantapur	25	4	77
North Arcot	119	15	193
South Arcot	143	14	157
Bellary	116	5	75
Chingleput	241	...	247